Amendments to the Specification:

Please amend the specification as follows:

Page 1, please amend the first paragraph as follows:

The invention relates to a method and device for detecting the opening angle of a shutter of an adjustable rotating shutter in a film camera~~, according to the preamble of claims 1 and 13~~.

Page 2, please delete the fourth paragraph as follows:

~~This is achieved according to the invention through a method having the features of claim 1 and a device having the features of claim 13.~~

Page 4, the fifth paragraph through page 5, the first paragraph, please amend as follows:

Since the index positions and the calibrating value are constant a constant off-set can be determined from the equation

$$O = I_{BF} + I_{VF} + K$$

with I_{BF} the index position of the shutter vane,

I_{VF} the index position of the shutter adjustment vane and

K the calibrating value

wherein with an angle α which is less than 0°, the value is increased around 360° ~~so long~~ until it is greater than or equal to 0° or with an angle α which is greater than or equal to 360° the value is reduced around 360° ~~so long~~ until it is less than 360°. The calibrating value K is a correction value which is produced from the relationship of the reference marks coupled

with the revolutions of the shutter vane and revolutions of the shutter adjustment vane.

Page 13, please amend the second paragraph as follows:

The sectional view through an opto-electronic sensor shown in Figure 2 shows by way of example the graduated plate 70 coupled to the shutter shaft 20 for detecting the position of the shutter vane 2 as well as a scanning device 71 for scanning the graduated plate 70. The principle construction of the opto-electronic sensor illustrated in Figure 2 corresponds to the conventional opto-electronic angle measuring instruments with a photo electrically scanned graduation with up to 18.000 or 36.000 radial division lines on one graduated plate 70 which is formed by way of example as a glass plate. Since the opto-electronic sensor is mounted inside the camera housing which is ~~in any case~~ already protected against dust, dirt and water, there is no need for any additional housing [[when]] since the film is guided and protected against outside light so that the sensor housing 710 can be part of the camera housing.

Page 13, please amend the third paragraph as follows:

The scanning device 71 consists of a semi-conductor light source 711, a condenser lens 712 and a scanning plate 713 which are mounted on the one side of the graduated plate 70 whilst on the other side of the graduated plate 70 there are photo diodes 714 so that the beams originating from the semi conductor light source 711 are converted by means of the condenser ~~lends~~ lens 712 into parallel light beams and pass, through the divisions provided in the scanning plate 713 and the incremental and code signal tracks arranged on the graduated plate 70, to the photo

diodes 714. The photo diodes 714 are connected in a manner not illustrated in further detail through a follow-up electronics with analogue/digital converter and where applicable a multiplex device ~~and this~~ is used with the digital position counting and difference forming device 10 according to Figure 1.

Page 13, please amend the fourth paragraph through page 14, line 3 as follows:

Figure 3 shows a perspective view of a sensor with photo electric scanning, according to a copying measuring principle, and a graduate plate with incremental track and reference mark track.

Page 14, please amend the first paragraph as follows:

The sensor contains a light source 711 which preferably consists of a light-emitting diode, a condenser lens 712 for producing parallel light beams which fall onto a scanning plate 713, which has both a lined grid for the incremental track 701 of [[the]] a graduated plate 70a and also a lined grid for the reference mark track 702 of the graduated plate 70a. The sensor which operates in the transmitted-light process according to Figure 3 has on the other side of the graduated disc 70a photo elements 714, 715 which are aligned with the incremental track 701 and the reference mark track 702.

Page 14, please amend the second paragraph as follows:

Since the lined grid of the incremental track 701 and reference mark track 702 is moved relative to the counter grid of the same structure of the scanning plate 713, the lined grids of the

incremental track 701 and reference mark grid 702 of the graduated plate 70a alternately overlap with those of the scanning plate, ~~from which~~ thereby generating light/dark modulations ~~are generated~~ which are detected by the photo elements 714, 175.

Page 14, please amend the third paragraph as follows:

With the sensor illustrated in Figure 3 a reference mark 702 is mounted on the graduated plate 70a~~, i.e. to~~. To produce an absolute reference, the reference mark 702 must be approached by the parallel light beams which in the most unfavourable case requires a complete revolution of the graduated plate 70a and thus of the shutter vane 2 and shutter adjustment vane 3 respectively. In order to accelerate the approach of a reference mark instead of one single reference mark 702 a distance-coded reference mark track can be provided in which next to the incremental track 701 is a track on which reference marks are provided at defined different spacing. The absolute position of the shutter vane 2 according to Figure 2 or shutter adjustment vane 3 according to Figure 1 is thereby already ~~available~~ determined after travelling over two adjoining reference marks.

Page 14, please amend the fourth paragraph as follows:

An alternative to a sensor with an incremental track and a reference mark track, is an absolute value sensor which is shown diagrammatically in perspective in the form of a sensor with photoelectric scanning in Figure 4.

Page 14, the fifth paragraph through page 15, the first paragraph please as follows:

The sensor illustrated in Figure 4, ~~has similar~~ similarly with [[to]] the sensor illustrated in Figure 3 has a light source 711, a condenser lens 712 and a scanning plate 713. [[The]] A graduated plate 70b [[has]] is different from the graduated plate 70a of the sensor illustrated in Figure 3 in that in addition to an incremental track 701 several code tracks 703 to 706 arranged radially side by side and which are scanned by means of the photo elements 717 are assigned to the individual tracks.[[,]] The coding of the code tracks 703 to 706 ~~can take place in any way~~, may be accomplished in various ways for example ~~in the~~ using gray code.

Page 15, please amend the first paragraph as follows:

Figure 5 shows a plan view of a graduated plate 70c in which next to a reference mark 702 and an incremental track 701 there are two tracks 707, 708 ~~arranged~~ radially off-set [[to]] from the incremental track 701 from which a sine and cosine signal is obtained. The width of the tracks 707, 708 changes over the circumference and the ~~maxima~~ maximum widths of the two tracks are off-set from each other by 180°. Through anti-parallel connection of the photo elements scanning the graduated plate 70c arise output signals symmetric with the zero line with a signal period per revolution from which through an arctan calculation an absolute value is obtained for the shutter opening angle or the light/dark sector of the adjustable rotating shutter 1 according to Figure 1.

Page 15, please amend the second paragraph as follows:

In order to set a desired shutter opening angle or regulate the shutter opening angle, a corresponding control of the shutter adjustment vane motor 33 is necessary according to Figure 1. This control can - as already explained ~~already~~ in respect of Figure 1 - take place through slip rings from the amplifier 13 to the shutter adjustment vane motor 33 or alternatively with a motor control illustrated in Figure 6.

Page 15, please amend the fourth paragraph through page 16, first paragraph as follows:

The energy ~~for feeding~~ fed to the shutter adjustment vane motor 33 co-rotating with the shutter shaft 20 is transferred through an energy transfer device 61, 62, 63 from the camera to the adjustment shutter 1 and consists of a high-frequency-operated divided transformer 62 whose primary winding 621 is connected to a direct current converter or inverter 61 on the primary side and whose secondary winding 622 is connected to a direct current converter or rectifier 63 on the secondary side. The direct current converter 61 on the primary side is connected to a current supply line 48 whilst the direct current converter 63 on the secondary side is connected to a rotating amplifier 66, more particularly to a 4-quadrant motor amplifier whose output feeds the shutter adjustment vane motor 33 and whose control input is connected to a first output of the processor 60.

Page 16, please amend the first paragraph as follows:

The electronics contains a first signal transfer device 64, 65 for transferring [[the]] a setting value with an optical

transmitter 64 which is connected to the camera housing 5 and which is connected by way of example to the output of the shutter adjustment vane position regulating device 12 according to Figure 1 through a control line 47 which transfers data from the camera to the rotating structural group or adjustment shutter 1. The optical signals issued from the optical transmitter 64 are received by an optical receptor 65 connected to the adjustment shutter 1 and are sent as control signals to a first input of the processor 60.

Page 16, please amend the second paragraph as follows:

A second signal transfer device 68, 69 for transferring the actual value has an optical transmitter 68 rotating with the adjustment shutter 1 and connected to a second output of the processor 60. The signals of the optical transmitter are received by an optical receptor 69 connected to the camera housing 5 and are connected through a control line 47' ~~which can as bi-directional control and data line be identical with the control line 47,~~ to the input of the shutter adjustment vane position regulating device 12 according to Figure 1. [[and]] The control line 47' can be a bi-directional control and data line like control line 47 and transfers data from the adjustment shutter 1 to the camera.

Page 17, please amend the fourth paragraph as follows:

The current supply to the shutter adjustment vane motor 33 from the rotating amplifier 66 takes place ~~in the beat~~ at a frequency defined by of the setting value which is transferred through the optical transmitter 64 and optical receptor 65 or alternatively inductively through an impulse transfer member or by means of

[[the]] a carrier frequency modulated ~~up to~~ to be superimposed on the current supply from the camera skeleton frame 5 to the moving rotating shutter 1.